

HS Reference (Non River Flood Watches)

(Please Note: For Watches, the Forecast Zones need to be loaded in the perspective first, before being visible in Maps)

Flood Watch - Single Segment

1. With HS open, Click on the **MAPS** icon on the **HS toolbar** to select **Forecast Zones**. The map boundaries **turn green** and the mouse pointer will become a +.
2. **Left-click** (or left-click and drag) zones to be included in the watch. (**Left click** again to deselect unwanted zones that were accidentally selected).
3. When done, right-click to convert the painted area to a polygon. The **HID** will open with only the **"Hydrology"** category selected.
4. Set the Type to be (**FF.A or FA.A**). Adjust the **Time Range** and **Details** as needed.
5. When done, click **Preview**. The product editor appears. Fill out necessary **bullet details**.
6. When ready, select **Issue All** followed by **Issue** to send to the product.

Flood Watch - Segmented

1. With HS open, Click on the **MAPS** icon on the **HS toolbar** to select **Forecast Zones**. The map boundaries **turn green** and the mouse pointer will become a +.
2. **Left-click** (or left-click and drag) zones to be included in the watch. (Left click again to deselect unwanted zones that were accidentally selected).
3. When done, right-click to convert the painted area to a polygon. The **HID** will open with only the **"Hydrology"** category selected.
4. Set the **Type** to be (**FF.A or FA.A**) and adjust the **Time Range** and **Details** info as needed. **Do NOT click Preview**.
5. Click on the **MAPS** icon on the **HS toolbar** to select **Forecast Zones**. The map boundaries **turn green** and the mouse pointer will become a +.
6. When done, **right-click** to convert the painted area to a polygon. The **HID** will open with only the **"Hydrology"** category selected.
7. Set the Type to be (**FF.A or FA.A**). Adjust **Time Range** and **Details** info as needed.
8. You should have two tabs open in your **HID**, one for each segment. If not, go to the **Status Console** and **cntrl-left click** on the first segment to get it to show in the **HID**.
9. When done, click **Preview**. The product editor appears. Fill out necessary **bullet details**.
10. When ready, select **Issue All** followed by **Issue** to send to the product.

Flood Watch - Remove Zones from a Flood Watch

1. From the **HS Console**, **left-click** the **FA.A or FF.A** that you wish to modify. The **HID** will appear.
2. **Right-click** specific zones that you want to remove. They should disappear.
3. When finished, go to the **HID** and select the **Update Hazard Hatch Area** checkbox. The zones should be removed. You cannot make additional adjustments with the checkbox selected, so be sure to deselect checkbox if additional changes are needed.
4. When done, select **Preview**. You will see two segments....A CAN for the cancelled watch zones, and a CON for the continued zones. You will also be prompted for an **Ending Option** in the **Product Staging** window. Select an option and the select **Continue**.
5. The product editor appears. Fill out necessary **bullet details**.
6. When ready, select **Issue All** followed by **Issue** to send to the product.

HS Reference (Non River Flood Watches)

Flood Watch - Separate Flood Watch into Multiple Segments

1. Let's say you want to extend the time for a portion of zones in your watch. You'll need to separate out these zones and adjust the end times.
2. From the **HS Console**, select the **FA.A or FF.A** that you wish to modify.
3. **Right-click** specific zones that you want to adjust (you will remove them first). When done, select **Update Hazard Hatch Area** from the HID.
4. Click on the **Maps** icon on the **HS toolbar** and select **Forecast Zones**.
5. Now, you'll create a new segment. **Left-click** on zones you removed in the previous step.
6. When done, **Right-click**. In the **HID**, assign the **Type** as the same Watch type as from previous.
7. Adjust the **End Time** as needed and select **Preview**.
8. You should see the first segment has a VTEC of **CON**, while the second segment you just created is **EXT**.
9. Review and adjust bullet details as needed.
10. When ready, select **Issue All**, followed by **Issue** to send the products.

Flood Watch - Extending (EXA) to an existing Flood Watch

1. Select the existing watch you wish to extend (or add zones to) from the **HS console**.
2. Click on the **Maps** icon on the **HS toolbar** and select **Forecast Zones**.
3. **Right-click** on zones you wish to add.
4. When done, **right-click** and note the painted area will be converted to a polygon.
5. Select the same Product **Type**. Modify the **HID** details, but leave the Time Range alone.
6. Select **Preview**. You should see an **EXA** for the extended area segment and a **CON** for the other segment/s.
7. Update **bullet details** as needed. When ready, **select Issue All** followed by **Issue**.

Flood Watch - Ending a Flood Watch

1. Select the issued event in the **HS console** and then **right-click** on the select row (rows) to bring up a list of options.
2. Select **End This**. (If you select multiple rows, you will see End x Selected Issued, where x can be greater than 1.
3. The **HID** appears, Adjust the **Details** section as needed. (Note: When you issue a partial cancellation (removing zones, the CAN and CON segments will come up in the **Product Editor**. You will need to modify the text of each segment).
4. Select **Preview**. Adjust bullet details as needed in the Product Editor.
5. When ready, select **Issue All**, followed by **Issue** to send the products.

Revert This - Revert any product back to Issued (Start Over)

1. At any point before the final issuance of any product, you may **revert** product(s) to **ISSUED** by **right clicking** the events in the **HS Console** (or in the spatial display in Manage hazards) and choose **Revert This**.

Non River Flood Advisories/Warnings

Create a FA.W, FA.Y or FF.W using drawing tools

1. Select the **Drawing Tools** button from the **HS console**.
 - a. For **Draw Polygon: Left-click** in the spatial display to set each vertex. Add as many as necessary, then **right-click** to complete the polygon and bring up the **HID**.
 - b. For **Draw Freehand Polygon: Left-click** and hold in the spatial display and drag the point until the polygon is complete. The polygon is defined when the mouse button is released, after which the **HID** will appear.
2. Select (**FA.W, FA.Y, or FF.W**) from the **Type** menu. From here, the **HID** will resemble the **WarnGen** interface with a few differences.
 - a. In the **Drawing section**, the **Update Hazard Hatched Area** option will preview the down-sampling of the high-resolution polygon to the legacy 20 vertices limit.
3. When done, select **Preview** to bring up the **Product Editor**. You can only adjust information in the white boxes.
4. Select **Issue All**, followed by **Issue** to send the product.

Upgrade a Product (ie FA.Y to FF.W)

1. Select the desired **FA.Y** in the **HS Console** to bring up the **HID**.
2. In the **HID**, change the **product Type** to **FF.W** (convective) and adjust **Details** (if desired).
3. Select **Preview**. You will see two tabs, (In the **HS Console - FA.Y Ending, FF.W Pending**)
4. In the Product Editor Adjust wording and text.
5. When ready, select **Issue All**, followed by **Issue** to send the products.

Downgrade a Product (ie FF.W to a FA.Y)

1. Select the desired **FF.W** in the **HS Console** to bring up the **HID**.
2. In the **HID**, change the product **Type** to **FA.Y** and **Details** if desired.
3. Select **Preview**. You will see two tabs. (In the **HS Console - FF.W Ending, FA.Y Pending**)
4. Adjust wording and text.
5. When Ready, select **Issue All**, followed by **Issue** to send.

End a Product Event

1. Select the **Product** in the **HS Console**.
2. In the **HS Console**, **right-click** and **hold**. Select the option to **End This**.
3. In the **HID**, select an **Ending Option** (reason)
4. Select **Preview**. Adjust any wording if needed. Select **Issue All** followed by **Issue** to send.

Create a FF.W or FF.A using the Burn Scar Flood Recommender

1. Select on the **TOOLS** icon from the **HS Console** and choose **Burn Scar Flood**.
2. From the Recommender dialog, select the desired **Burn Scar**, followed by selecting the **Warning** or **Watch** radio button. When ready click **Run**.
3. If needed, adjust the polygon. Otherwise , update **HID Details** and click **Preview**.
4. Modify wording. When ready, click **Issue All**, followed by **Issue** to send the product.

Non River Flood Advisories/Warnings

Create a FF.W with the Flash Flood Recommender (FFR)

1. **NOTE:** The most effective way to use the recommender is to evaluate the raw data before running the recommender and then input the thresholds desired for a first guess polygon (ie 1hr ratio>100% for an urban area or 3hr diff > 0.5").
2. From the **HS Console**, click the **Tools** icon, followed by the **Flash Flood Recommender**.
3. Most of the options will be familiar to FFMP users. The user can set to run the recommender for the entire **CWA** or for a **user defined area (left-click, hold and draw** over the area).
4. When ready, select Run. The recommender results window will inform the user of the POTENTIAL hazards in the HS console. Note: Any instances with more than one polygon will be combined.
5. Once a polygon has been selected, you can use the **pencil tool** with **AddToPolygon/Remove Polygon Area** to adjust the polygon area. When done, select **Update Hazard Hatched Area** in the **HID**. Note: There are other tools that you will want to become familiar with.
6. Modify your hazard event details in the **HID** and click on the **Preview** button.
7. In the Product Editor, modify text as needed.
8. When ready, click **Issue All** followed by **Issue** to send products.

Create a FF.W or FF.A using the Dam/Levee Break Flood Recommender

1. Click on the **Tools** icon from the **HS Console** and choose the **Dam/Levee Break Recommender**.
2. From the Recommender dialog, select the desired **Dam** from the pull down list, followed by selecting the **Warning** or **Watch** radio button. When ready click **Run**.
3. If needed, you can adjust the polygon. Otherwise , update details into the **HID** and click **Preview**.
4. Modify details in the Product Editor.
5. When ready, select **Issue All** followed by **Issue** to send products.

Correcting a product in HS

1. Select the **Product** you wish to correct in the **HS Console**.
2. In the **HS Console**, **right click** and hold on this product. Select the **Corrections menu** to choose to **Correct This Event**.
3. Depending on the product you are correcting, you may get a pop-up that asks you to "Select initial Segment(s) to Correct" (click "Continue" if appears). Once you start correcting a product you have entered a special mode in HS. You will see **Production Correction Mode** labeled on the bottom of the **HS Console**.
4. When the **HID** appears, adjust any details if needed and then click **Preview**.
5. Adjust information in the Product Editor as needed. When done, you can choose to select **Issue All** followed by **Issue**, to send the correction.
6. **If desired**, you can also select **Review Correction** to view a **Corrections Comparison** window which pops up. The original ISSUED text will be displayed next to the initial CORRECTION product. Make sure everything is correct in the corrected text product and note any differences between the two. Then click **Dismiss**, **Issue All**, followed by **Issue**.

River Flood Advisories/Warnings

Create River Flood Warnings/Advisories using the River Flood Recommender

1. Open the **Hydro Perspective** in CAVE and **launch HS**.
2. From the **HS Console**, select the **SETUP** icon, followed by **Load Settings** and then select **Hydrology_River**.
3. From the **HS Console**, select the **Tools** Button and choose **River Flood Recommender (RFR)**.
4. Run the **RFR**. (The **RFR** runs using the latest observed and forecast stage values in the hydro database. The **RFR** will look for any gage observation or forecast that is at, above, or within 5% of flood state (This can be re-configured). If any gauges meet any of this criteria, then the events will be populated in the **HS Console** with **POTENTIAL** status.)
5. Use the sort option in the **HS Console** to help organize events. You can select multiple events for one river in the **HS Console** by **left -clicking** them and using **CNTRL+left-click** to select multiple rows. The selected events show up separately in the **HID**.
6. In the **HID**, make any necessary changes and click **Preview**.
7. Make adjustments in the Product editor and when ready **Issue All** followed by **Issue**.

Create River Flood Warnings/Advisories for one location

1. Open the **Hydro** perspective in CAVE and launch **HS**.
2. From the **HS Console**, select the **SETUP** icon, followed by **Load Settings** and then select **Hydrology_River**.
3. **Double-click** on the desired **river gage** to select in the **Hydro** perspective. Right-click and hold followed by selecting **Create Hazard** from the menu.
4. Inspect the **Flood Recommender** window. Inspect the **Flood Recommender Results** window. Click **Close** and proceed to the **HID**.
5. Review and adjust and Details information (if needed) and click **Preview**.
6. A **Product Staging** dialog will open for the product (FLW, FLS, FFA). Make desired changes and click **Continue**.
7. Review and adjust any information in the **Product Editor**.
8. When ready, click **Issue All** followed by **Issue** to send the product.

Follow up a River Flood Event - (Run RFR prior to issuing this product)

1. **Note:** Users need to run the RFR before issuing a River Flood follow-up. Running the RFR updates both the ob and forecast data from the hydro database.
2. Select the desired **river gage** from the **Hydro** perspective. **Right-click** and select **Create Hazard**.
3. Inspect the **Flood Recommender** window. Inspect the **Flood Recommender Results** window. Click **Close** when done and proceed to the **HID**.
4. Adjust and Details information (if needed) and click **Preview**.
5. A Product Staging dialog will open. Make desired changes and click Continue.
6. Adjust any details in the Product Editor.
7. When ready, select **Issue All** followed by **Issue** to send the products.

River Flood Advisories/Warnings

Creating an event NOT recommended by the River Flood Recommender

1. A river event can always be created, even when the underlying obs/forecast does not support it.
2. From the **HS Console** in the **Hydro** perspective, select the **SETUP** icon, followed by **Load Settings** and then select **Hydrology_River**.
3. Select the desired **river gage** to act on in the **Hydro** perspective and **right-click** and **hold** followed by selecting **Create Hazard** from the menu.
4. Inspect the **Flood Recommender** window. Make sure the **Include points below advisory** button is checked and select **Run**.
5. The software will recommend **HY.S** by default if Include points below advisory is checked.
6. In the **HID**, adjust the **Type** as needed. Review and adjust any **Details** information (if needed) and click on **Preview**.
7. A **Product Staging dialog** will open. Make desired changes and click **Continue**.
8. Adjust and review **details** in the Product Editor. When ready, click **Issue All** followed by **Issue**.

Transitioning a River Flood Event

1. There are two methods to transition a river flood event to another river flood event type
 - a. The RFR recommends a replacement that the user selects from a list of POTENTIAL events in the console.
 - b. The user selects an existing event (via the **HS console**) and then changes the event Type.
2. From the **HS Console**, select the **SETUP** icon, followed by **Load Settings** and then select **Hydrology_River**.
3. Select the desired **river gage** to act on in the **Hydro** perspective and **right-click** and hold followed by selecting **Create Hazard** from the menu.
4. In the **Type** section of the **HID**, choose from one of the available event types.
5. Review and adjust and Details information (if needed) and click **Preview**.
6. A Product Staging dialog will open for the product (FLW, FLS, FFA). Make desired changes and click **Continue**.
7. Review and adjust any information in the Product Editor and click Issue All when ready.
8. Click **Issue** to send the product. The event will be displayed as ISSUED in the HS console.

Ending a River Flood Event

1. There are three methods to end a river flood product:
 - a. **HS Console: Right-click** the hazard row and select **End This**
 - b. **Spatial Display: Left-click** on the polygon to select it. It will become hatched and the **HID** will appear. **Right-click** and hold to select Manage hazards -> **End This**.
 - c. **RFR:** Run the **RFR**. Once the event is listed in the console as **ENDING**, select it and review in the **HID**.
2. Select **Preview**. Modify text for your product in the Product Editor and click **Issue All**.
3. Click **Issue** to send the product.

HS Service Backup/Additional Reference

Using the HS Storm Track Tool for (FFW) Flash Flood Warnings

1. **Overview:** This feature is only available for FFW in HS IOC Hydro. Furthermore, tracking of features will be limited to a single point with an assumption that the storm moves with a constant speed and direction. Additional features for **Storm Track** will be released in post IOC HS.
2. With **Radar** data loaded, Select on the **TOOLS** icon from the **HS Console** and choose **Storm Track**.
3. Move the **Drag to Hazard Location** cursor to the **current Storm location**. The HID will appear with Type FFW.
4. Similar to **WarnGen**, move back a few frames and adjust the cursor location. (Left click, hold and move). A storm track will appear. Adjust track and polygon as needed. **Note:** The functionality is a little unstable. You may have to turn on/off panning.
5. When done, Adjust **Details** in the **HID** and select **Preview** to bring up the **Product Editor**. You can only adjust information in the white boxes.
6. Select **Issue All**, followed by **Issue** to send the product.

Running Service Backup

1. On the **HS Console**, select the down arrow (far right of console) and select **Change Site**, followed by the desired site to backup. (Note the console will display you are in **Service Backup Mode**, backing up: **XXX**)
2. If your screen becomes too cluttered, you can adjust which sites are active via **HS Console->Setup->Edit/Filter** Toggle off an unused **Site ID**.
3. You will need to be sure **GFE Service Backup** has been invoked for your backup office.
4. **Note about Maps:** If no Maps are available, you may have to manually add Forecast Zone, or County maps from CAVE (CAVE->Maps->Forecast Zones)
5. Create products as needed. Note: You may have to manually Load Products from (**Setup->Load Setting->Hydrology_All**) to make sure all products are available.
6. When done. Use **HS Console**, select the down arrow (far right of console) and select **Change Site**, Change your site back to your primary site to leave **service backup**.

Hazard Service General GUI Reference

Overview: For detailed information about HS GUI setup/configuration, please refer to the general [HS jobsheets found in VLAB](#). These jobsheets are available in AWIPS and can be found under Hazard Services Job Sheets pull down.

Useful Components/Names

1. Spatial Display
2. Console
3. Setup - Settings
4. Tools
5. Hazard Information Dialog (HID)
6. Product Editor

The screenshot shows the CAVELWx-D20 interface with several components highlighted:

- 1. Spatial Display:** The main map area showing a river network and flood zones.
- 2. Console:** The Hazard Services Console window showing a table of events.
- 3. Setup - Settings:** The Setup menu and dialog box.
- 4. Tools:** The Tools menu and dialog box.
- 5. Hazard Information Dialog (HID):** The Hazard Information dialog box showing event details.
- 6. Product Editor:** The Product Editor window showing event details and recommendations.

The Hazard Services Console table includes the following data:

Event ID	Lock	Hazard Type	Status	Stream	Point ID	Start Time	End Time	Expiration Time	VTEC
1973	U	FF.W.Connector	ISSUED	Opengoon Creek	MBGW2	21:48Z 27-May	00:45Z 28-May	23:00Z 17-May-18	[NEW]
2058	U	FLA	ISSUED	South Branch Potc	SPRW2	01:42Z 19-May	21:36Z 19-May	23:00Z 17-May-18	[NEW]
2059	U	FLA	ISSUED	South Fork Shenan	PROV2	11:00Z 17-May	21:36Z 19-May	23:00Z 17-May-18	[NEW]
2060	U	FLY	ISSUED	South Fork Shenan	PROV2	11:00Z 17-May	21:36Z 19-May	23:00Z 17-May-18	[NEW]

